<u>**Amendments to the Claims**</u>

This listing of claims will replace all prior versions and listings of the claims:

1. (currently amended) A method for defining attributes of polygon border tiles, comprising:

 decomposing a polygon into a plurality of segments;

 decomposing the segments into a plurality of border tiles;

 designating <u>a same single</u> ~~at least one~~ edge for each border tile;

 determining <u>whether the single designated edge of each border tile crosses the polygon, is within the polygon, or is outside the polygon in order to determine</u> a spatial relationship between the designated edge of each border tile and the polygon; and

 generating the attributes of the border tiles based on whether <u>only</u> the <u>single</u> designated edge of each border tile crosses the polygon, is within the polygon, or is outside the polygon.

2. (currently amended) The method of claim 1 wherein generating the attributes further comprises:

 generating a first attribute if the <u>single</u> designated edge of the border tile crosses the polygon;

 generating a second attribute if the <u>single</u> designated edge of the border tile is disposed completely within the polygon; and

 generating a third attribute if the <u>single</u> designated edge of the border tile is disposed completely outside the polygon.

3. (original) The method of claim 2 wherein the first, second, and third attributes are different from each other.

4. (currently amended) The method of claim 1 wherein designating a same single ~~at least one~~ edge for each border tile further comprises designating an eastern edge for each border tile.

5. (currently amended) The method of claim 1 wherein designating a same single ~~at least one~~ edge for each border tile further comprises designating a same single edge selected from the group consisting of an eastern edge, a western edge, a northern edge, or a southern edge ~~the same edge for each of the plurality of border tiles~~.

6. (currently amended) The method of claim 1 wherein the determining element ~~a spatial relationship between the designated edge of each border tile and the polygon~~ further comprises determining if the single designated edge of a border tile is within an interior space of the polygon.

7. (original) The method of claim 1 further comprising:

designating the segments as vectors that traverse in a clockwise direction around a border of the polygon;

determining an attribute of a border tile based on a proximity of one of the vectors to one of the edges of a border tile and based on a direction of the one of the vectors through the border tile.

8. (original) The method of claim 1 further comprising decomposing multiple segments through a single border tile.

9. (currently amended) A computer-readable medium having computer-readable program code embodied therein for causing a computer system to perform:

defining a polygon having a border that is non-self-intersecting and formed of a plurality of segments on a grid of tiles;

defining, from the grid of tiles, a plurality of border tiles that intersect the segments; and

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generating an attribute associated with a same single edge for each of the plurality of border tiles at least one edge of a border tile, wherein the attribute is based on whether only the same single edge of each border tile crosses the polygon, is within the polygon, or is outside the polygon. selected from the group consisting of: the at least one edge crossing a segment, the at least one edge disposed completely within the polygon, and the at least one edge disposed completely outside the polygon.

10. (original) The computer-readable medium of claim 9 wherein the attribute can be modified on at least two different occasions for the same border tile.

11. (original) The computer-readable medium of claim 9 wherein the attribute is set to a first condition and then re-evaluated and set to a second condition if multiple segments pass through the same border tile.

12. (original) The computer-readable medium of claim 9 wherein the attribute is associated with an eastern edge of the border tile.

13. (original) The computer-readable medium of claim 9 having computer-readable program code embodied therein for causing the computer system to further perform converting the polygon to a non-self-intersecting chain-code wherein at least one segment passes twice through the same border tile.

14. (original) The computer-readable medium of claim 9 having computer-readable program code embodied therein for causing the computer system to further perform:

defining a y-axis through a border tile;

generating an attribute based on a proximity of a segment through the y-axis.

15. (original) The computer-readable medium of claim 14 wherein generating an attribute further comprises comparing proximities of two different segments through the y-axis.

16. (currently amended) A computer system comprising:

a processor; and

memory having computer readable code executable by the processor for:

decomposing a polygon into plural segments on a grid of tiles;

identifying a same single edge for each of plural first border tiles having an edge, each of the first border tiles intersecting at least one of the segments; and

identifying a spatial relationship between each of the single edges and the polygon to define an attribute of the plural first border tiles with respect to the polygon, the attribute being based on whether only the single edge of each border tile is one of crossing the polygon, being within the polygon, and being outside the polygon. spatial relationship being one of: (1) the at least one segment crossing the edge, (2) the edge being located within the polygon, and (3) the edge being located outside the polygon.

17. (original) The computer system of claim 16 wherein the plural segments are non-self-intersecting.

18. (currently amended) The computer system of claim 16 further comprising computer readable code executable by the processor for identifying a spatial relationship between a direction of the at least one segment though one of the first border tiles to define an attribute of the one of the first border tiles.

19. (currently amended) The computer system of claim 16 further comprising computer readable code executable by the processor for defining a horizontal axis through one of the first border tiles and identifying a spatial relationship between the at least one segment and the horizontal axis to define an attribute.

20. (original) The method of claim 19 wherein the at least one segment crosses the horizontal axis to generate a first attribute and does not cross the horizontal axis to generate a second attribute different than the first attribute.